Bulletin 160-03 Advisory Committee Draft
Ag Caucus Comments
June 24, 2004

Volume 1

Chapter 1, Water Plan Overview

1. Page 1, 2nd Paragraph – Even though Ag. Is mentioned in the next paragraph it seems that it should also be mentioned as a factor in this paragraph that sums up the State's economic output.
2. Page 8 of Box descriptions, Principles for Integrated Resource Planning, Increase Regional self-sufficiency – It seems that there should be some recognition here that moving excess water from one region to regions that are short of water is something that will always be necessary in California. Water development and our economy in California are based on this due to the geography and timing of our precipitation.

Chapter 2, California Water Today

1. Page 1, 4th Paragraph – The statement that "As flows make their way into the valleys, much of the water percolates into the ground." would lead the reader to believe that here in northern California we have a desert stream situation. I suggest the word "much" should be replace with a rough percentage of how much percolates into the ground.
2. Page 7, 2nd full paragraph – Add the fact that the CVPIA was passed by Congress in 1992 which allocated more CVP water towards the environment.
3. Box 2-xx description Historical Perspective of Water Development in California, 2nd paragraph – Replace 350 acres with 738,000 acres.

Findings and Recommended Actions

1. Page 2, Current Conditions, No.6b – This paragraph would be more accurate if the 2nd and the 3rd sentences were to change positions. The idea is that even though farmers have increased efficiencies over the past 25 years they are still short of water even in average years. It could be added that in the San Joaquin valley the CVP contractors are chronically short of water due to increased environmental uses of water in the Delta.
2. Page 4, Future Uncertainties and Scenarios, No. 14 – It is stated that it is "likely" there will be reductions in the Sierra snow pack. This seems pretty strong and it seems that the word "may" be reductions would be more accurate.
3. Page 6, Recommended Actions, No.1 – The CALFED conveyance projects should also get mentioned here since they are at least as important as storage projects.
4. Page 10, Strategy Investment Options Table – Conveyance it seems should be listed under Supply Augmentation. Many of the CALFED projects listed under conveyance produce some water. The South Delta Improvement Project alone produces several hundred thousand acre feet. The cost of conveyance seems high. I have seen a number of $300 million dollars for this in some CALFED documents.

Findings, items 2 and 3: Water development makes most of California agriculture and urban development possible. Without it, California would not be what it is today. It has had benefits and has caused problems. Why do the first two findings about water deal with the relative amount of water "consumed" by agriculture and the environmental damage caused by water development? A more balanced approach would be desirable.

If there is a finding about how much water agriculture consumes, there should be a finding about how much is dedicated to the environment.

Are you sure that freshwater biodiversity has been reduced? What data support that? In the Delta, 95+% of the fish are aliens. This may not be desirable (unless you like striped and largemouth bass), but it seems that biodiversity has increased.

Finding #2 – change the word “household” to either “urban” or “municipal and industrial”

Finding 6a: This is not a challenge. The way it reads, urban areas are doing just fine and will continue to do so. What is the challenge?

Finding 6b: This seems to imply that farmers can continue to increase production at the rate of 50% every 25 years. This is not expected. Yield increases are like water conservation: the first increases are the easiest to come by.

Finding #6 – This implies that less water is going to ag than 5 or 10 years ago. State it. 50% more crop – This should be explicit that this is terms of tons, not dollars.

Finding 7: We do not know that similar or worse conditions of unreliable water supply will occur.

Finding 8: One might conclude that deferred maintenance and aging infrastructure are the biggest threats to water supply for all uses. This is not true. If the findings of the CALFED Panel on Delta seismic problems are considered, levee failure due to earthquake damage is the most likely. This has nothing to do with deferred maintenance and aging infrastructure. The panel concluded that the levees could not be fixed to avoid this risk. In fact, one major finding should be that the Delta continues to present major water supply, water quality, and environmental problems and, despite the political difficulty of doing so, these problems will eventually have to be addressed.

Finding 10: This is a mistaken interpretation of the Public Trust Doctrine. Water rights were subject to conditions to protect the public interest long before the Public Trust Doctrine was set forth for water by the State Supreme Court. The major effect of the Public Trust Doctrine was to make it clear that all water rights, even "vested" ones, could be reconsidered for their effect on public trust (or public interest) values, if in fact, there was ever any question that this could occur.

Finding 16: Federal and state funding have been essential ingredients in getting this broader range of water management activities carried out. Without mentioning this fact, it makes it appear that all that was required was enlightenment. It also does not provide the support for Recommended Action 1.

Recommended Action 1: It is not clear what "California needs to invest . . ." means. Does that mean the State should finance these things or does it mean that someone in California should, be it the state, other agencies, or the private sector? Without resolving that question, the statement should read "California should invest in water conservation, efficient water management for all uses of water, ..."

Finding 4: Make no mistake about it, we are not talking about unrealistic funding strategies.

The Delta continues to be a source of major water supply, water quality, and environmental problems. The Water Plan should at least address this situation is some productive way. New finding: The State should initiate a process to deal with the long-term problems of the Sacramento-San Joaquin Delta, addressing the following issues:

- The long term use of the Delta, including farming, recreation, wildlife habitat, and preservation/improvement of aquatic resources
- The vulnerability of Delta levees to floods, earthquakes, sea level rise, changes in upstream watershed hydrology, and other events that could effect use of Delta waters
- The quality and quantity of Delta exports and diversions for environmental urban, agricultural, and industrial use
- Measures to insulate Delta values from the threat of excessive water exports
- Means of funding any recommended changes in Delta land or water uses, including compensation for users, such as farmers, whose uses might be affected.

Recommendation #1 – Need to include maintain and improve water storage and conveyance and treatment infrastructure.

Recommendation #2 and #13 – The bold statements are findings, not recommendations. The statements under each are recommendations and should be the bolded recommendations, with the current bold statements move down as supporting statements.

Recommendation #5 – What about Delta levees? I found extremely little in the entire document on the needed to bring Delta levees up to current integrity standards for the benefit of 22 million Californians.

Chapter 5, Implementation Plan

1. Page 2, Recommended Action # 1, 1st paragraph – Once again conveyance should be mentioned here as well as storage.
2. Page 13, Recommended Action # 7, Action Plan and Intended Outcomes – It states that the SWP will improve delta water quality… What does this mean? If this is a CALFED project it should reference CALFED or at least the CALFED agencies. SWP alone cannot do what they suggest.

Changes all in Caps

Observation regarding page 5, items #16 & 17: The reality of water resource planning in the coming years will move local governments and water agencies closer together in a cooperative manner due to a number of factors, not the least of which is efficiency of use of budget $.

While the draft of the plan seems to hint at this evolution, but does not clearly call out the need for more closely coordinated plans and the integration of water resources planning in the context of local General Plans, ground water plans, watershed plans and other venues such as TMDL watershed efforts and flood plain / flood control / safety element (of general plans) coordination.

Just as discussions of conjunctive use projects move us into a comprehensive evaluation of surface and ground water resources, the need for integrated resources plans across jurisdictional boundaries - as regionally based efforts - is already upon us. Perhaps the plan could speak to this "early on" in the document.

Page 7, item #7 change as follows:

"The State AND LOCAL AGENCIES AND GOVERNMENTS needs to PARTICIPATE IN THE inventory, evaluation, and PROPOSE MANAGEMENT STRATEGIES TO DEAL with the CAUSE AND effects of contaminants on surface water and ground water quality."

Page 8 item #12 change as follows;

"DWR and other State agencies should encourage and assist representatives from disadvantaged communities and vulnerable populations, which have experienced SIGNIFICANT disproportionate adverse health and environmental impacts..."

Strategy Investment Options Table

Changes all in Caps

Note mm, footnote to same #3 change as follows:

"The Calfed SOLUTION area represents a portion of the state...."

Footnotes a,b – This may reduce demand on an individual property or district, but not by the ag water use sector as a whole, for which demand exceeds supply. Stating that it reduces demand implies that the conserved water is going to other than ag uses.

Footnotes h,i – There are no supply benefits resulting from water transfers. There is an ability to reallocate existing supplies from one sector or region to another.

Footnotes cc,dd – The cost estimate is not presented in the Ag Land Stewardship Resource Management Strategy document.

1) In Volume 1, Findings and Recommended Actions, item 15 under the heading of Future Uncertainties and Scenarios, it is proposed to rely in this edition of the Plan on an estimate of the 2030 water need which is derived by a 30 year extrapolation of "current trends". There is no reference to where and how this estimate is made. The following sentences should be inserted after the first sentence in item 15.
"This estimate of 2030 water demand assumes that "current trends" will continue to be both permissible and feasible from 2000 to 2030. The estimate implicitly assumes that the current net long term overdraft (depletion) of groundwater resources will and can continue in violation of Water Code Section 1004.6. It also assumes that the water supply available to produce food and other farm products will continue to be reduced by reallocation of farm water to urban and environmental uses, including by reallocation of water to EWA, and by urban sprawl taking both farm land and the water appurtenant to that land, and by conversion of farm land to wetlands, and by the proposed land fallowing, etc. Water Code 10004.6 stipulates that the plan must propose to provide enough water to meet the state's future needs. If the farm water supply per the plan is insufficient to produce food for the 2030 population, it will not comply with the Code.

Item 15 also states that based on the "current trends" analysis we will need XX million more acre feet of water. It then says that if that additional water was available, it would meet all needs. However, the Plan does not provide one or more lists of measures that could supply that additional water. The sentence which is now the second sentence in item 15 should be revised to say, "If the "current trends' forecast of need is assumed to be adequate, and if measures are provided to meet the forecasted need for water, the additional water would serve 14 million more Californians, sustain California's economy and agricultural industry, meet environmental restoration and water quality objectives, and eliminate groundwater overdraft".

2) In Volume 1 under Recommended Actions, item 3 insert a new number (1) "The state's role is particularly important in respect to assuring that the overall developed water supply is adequate to produce the housing materials, food, clothing, water, and other items that regions can not provide for themselves, and which must be imported from other regions to meet the growing public need.

3) In Volume 1 Strategy Investment Options Table the text acknowledges that the "water supply benefits" listed in the table are not additive among different strategies. However, even if they were additive, the total water supply benefit would only range from about 4.65 to 8 million acre feet. The plan should show that offsetting these alleged benefits about 2 million acre feet are needed to replace dependence on groundwater overdraft. Also the table is correct that water transfers do not create new water, but it should address and quantify the loss of water to the Bay that is released to maintain quality when water is transferred across the Delta. The table makes no claim that the "water supply benefits" will add up to an adequate supply. However, neither in the table nor elsewhere does the plan meet the Water Code requirement that the plan should propose one or more lists of measures which, if implemented, are estimated to be adequate to provide an adequate water supply to meet all future needs. The table does not do this. It does not include the quantified yield from new storage that will be needed in addition to the items list. It does not make it clear that any kind of storage in the Central Valley can only increase multiyear yield if it is filled with water that would otherwise flow to the Bay in excess of established outflow requirements. Do the estimates listed for water supply yield from surface and subsurface storage

meet that test? If so, how do we know that? Furthermore, the figures for CALFED storage yield should indicate whether CALFED's proposed design and operating plans are consistent with the yield claimed in the table.

4) In Volume 1, Chapter 1, changing the Water Plan, the second paragraph of the text objects to "gap estimates" Add the following sentence to the paragraph.
"However, the Water code, Section 10004.6, requires that the plan provide one or more estimates of the water supply required to supply all of California's future needs and one or more lists of measures which if implemented would provide that supply".

Volume 2

Introduction
Strategy Investment Options Table

Demand Reduction - Water Transfers

Water Transfers do NOT result in a demand reduction. Nor do they create any new supply on a statewide basis. PUT THIS SOMEWHERE UNDER ANOTHER CATEGORY. I recommend the Resource Stewardship category.

Notes for Table
(h) (i) – "Supply benefits…Cost estimate…"

There are NO supply benefits to the state as a whole from Water Transfers. I thought we had this resolved already.

Ag Lands Stewardship
California farmers and ranchers make a daily commitment to the environment. As caretakers of roughly one-third of the state, farmers endeavor to produce high quality farm products in an environmentally responsible manner. The reason? Agriculture is a long-term commitment. The fact that many of California's farming families are fourth and fifth generation speaks to a lasting relationship that farmers have with the land.

Nearly all listed species in California spend at least part of their life cycle on private lands. An estimated 75% of private land in California supports habitat. Eighty percent or more of wildlife in the continental United States is dependent on private land for food, water, and shelter. Finally, it is estimated that 60% of waterfowl in the Pacific Flyway use California rice fields for habitat in the winter months. (Commitment to Conservation, California Farm Bureau Federation, 2d ed., January 2002).

For these reasons, the Advisory Committee's Agricultural Caucus ("Ag Caucus") is quite distressed and displeased with the tone and content of the Agricultural Lands Stewardship ("ALS") section of the California Water Plan Update ("Plan"). The ALS section, as written, has little to do with agricultural land stewardship and much to do with agricultural land conversion.

The Plan should be a technical guide for water use decisions
California Water Code, section 10004.5, directs the Department of Water Resources ("DWR") to include in the Plan a discussion of various water strategies intended to "meet the future water needs of the state." Clearly, the Plan is intended to be a technical guide for water use decisions. Nowhere is it indicated that this Plan is to be a land use plan. Throughout this section, however, the author ("staff") continually, and inappropriately, recommends the conversion of agricultural lands to wildlife habitat. Such recommended land use decisions are inappropriate for this document and llie outside the bounds of its statutory authority.

The tone and content of this section does not reflect staff's stated definition and goals for agricultural land stewardship

According to staff's definition of ALS, "'[a]gricultural lands stewardship' means farm and ranch landowners – the stewards of the state's agricultural lands – producing public "environmental goods" in conjunction with the food and fiber they have historically provided while keeping land in private ownership." The ALS goal, according to Staff "is to promote sustainable agriculture practices with an economic return, while managing these productive lands for multiple benefits, including water management improvements."

Once the reader progresses past page one, however, it becomes immediately evident from tone and content of the document, that this section is written for those with habitat restoration interests, and that it is not at all written with the interests of agriculture in mind. While the opening paragraphs, containing the quoted language above are alluring, the readers need only read as far as the very next paragraph, found at the top of page two, to discover that staff's true interest is "land fallowing." In all, staff discusses the so-called benefits of land fallowing, described in various terms and by various names, a staggering 37 times[1]

Indeed, in one place, staff even goes so far as to describe a detailed "'land retirement' program" and to list such a program as an example of supposed agricultural stewardship.

If staff is sincere in its stated goal to "promote sustainable agriculture," these terms have no place in this Plan - and certainly not 37 places in the space of just eight pages. The removal of agricultural land from production to species habitat is not stewardship: It is land conversion.

The Ag Caucus recommends that staff provide options that include stewardship alternatives to avoid the loss of prime agricultural lands.

Staff ignores constitutional and legislative provisions that declare the importance of farms and ranches within the existing environment

California's prime agricultural land is a rare environmental resource. In fact, it is a unique environmental resource, among the most ideal lands in the world for sustainable agriculture. This fact has not gone unnoticed by California lawmakers and should be addressed by staff and acknowledged in this section.

California Constitution, Article XIII, Section 8, "heralds the importance of land used for the 'production of food or fiber' along with attendant open space values that significantly contribute to the environment."

In enacting the Delta Protection Act of 1992, the Legislature found:

(a) The [San Joaquin-Sacramento] Delta is an agricultural region of great value to the state and nation and the retention and continued cultivation and production of fertile peat lands and prime soils are of significant value.
(b) The agricultural land of the Delta, while adding greatly to the economy of the state, also provides a significant value as open space and habitat for waterfowl using the Pacific Flyway, as well as other wildlife, and the continued dedication of attention to that delta land in agricultural production contributes to the preservation and enhancement of open space and habitat value. (Pub. Res. Code Section 29703).

The Thurman Agricultural Policy Act provides:
A profitable and healthy farming industry must be sustained by a sound natural resource base of soils, water, and air that is developed, conserved, and maintained to assure sufficient quantities and highest optimum quality possible. (Food and Ag. Code Section 802(g)). One of the major principles of the state's agricultural policy shall be "to sustain the long-term productivity of the state's farms by conserving and

protecting the soil, water and the air that are agriculture's basic resources." (Food and Ag. Code Section 821(c)).

California Food and Agricultural Code, Section 411 provides:

"(a) The Department of Food ad Agriculture shall supply the Department of Water Resources with a forecast that estimates the amount of production of food, fiber, livestock, and other farm products."

"(e) The Department of Food and Agriculture shall furnish the forecast to the Department of Water Resources for estimating related water usage . . . The Department of Water Resources shall include this information in Bulletin 160."

The Legislature could not have been any more clear that it expects DWR to consider the effects its strategies will have on farmers and ranchers and their ability to adequately provide for California's growing population.

While staff does list several ALS practices and current ALS initiatives, the subsequent discussions are too brief and peppered with suggestions of land fallowing. These continued references to removing agricultural land from production undercut these fleeting references to ALS, and work to negate any notion of true, agricultural stewardship, as that concept is correctly and attractively (but deceptively) layed out in opening paragraphs of the section.

The Ag Caucus renews its recommendation to staff to delete any strategy that includes the removal of agricultural land from production and develop strategies consistent with the intent of the Legislature to protect and nourish agricultural resources.

Staff fails to adequately address the adverse impacts associated with agricultural land retirement
Section 10004.5 instructs DWR to include in the Plan "a discussion of the potential advantages and disadvantages of each strategy . . ." As discussed above, land idling is mentioned time and again, and yet there is scant discussion of the disadvantages and adverse impacts associated with agricultural land retirement.

Staff states, "[a]ny program that *stops irrigation* will have to provide for the cost of establishing permanent vegetation cover that is appropriate to the area, sometimes using temporary irrigation." (Emphasis added.) Staff goes on to mention in only two short sentences, start-up costs, program development, administration, and mitigation of impacts. This is an inadequate discussion of the very serious effects of ceasing irrigation on agricultural land.

While the Ag Caucus maintains that all land idling strategies be removed from this section altogether, if staff insists on retaining some discussion of such strategies, at a minimum, staff should fully and adequately address the "disadvantages" that will result. These disadvantages and adverse impacts include, but are not limited to:

- the possibility that with less agricultural land, California farmers and ranchers will be severely challenged to provide adequate, economical food and fiber for a population projected to increase 50% by 2030;
- the breakdown of agricultural infrastructure and fragmentation of agricultural land due to the necessary support services leaving the area;
- the loss of workforce and its associated economic benefits as farm employees relocate;
- the loss of farm-related business, i.e.: shipping, processing, etc., as a result of loss of tonnage;
- physical impacts including changes in drainage patterns, increase in water use, diminished groundwater recharge, and deterioration in water quality; and
- loss of local tax support.

While staff recognizes that mitigation is *required*, staff fails to suggest concrete measures to offset the loss of productive agricultural lands or to substantially lessen or avoid resulting, significant adverse impacts.

These measures should be defined in sufficient detail to show proportionality to the magnitude of the impacts.

Finally, staff fails to provide the reader with evidence to indicate how land idling is superior to the proven success from efforts farmers and ranchers are already making in conservation, and thus, to discuss the "advantages" of proposed strategies, as required under section 10004.5. Nor does staff indicate how success will be measured once agricultural land is retired.

The Ag Caucus recommends that staff provide complete information and evidence of success of all recommended strategies in order that the public and decision-makers can compare these recommendations to make informed strategy decisions.

Staff dismisses the lack of scientific data for its recommendation to retire agricultural land

Staff states, "despite interest in programs that temporarily or permanently stop irrigation, relatively little comprehensive analysis has been completed on the cost-effectiveness of these programs." However, staff then goes on to cite a 1991 study, asserting that "[f]indings suggest that stopping irrigation can be a cost-effective solution to meeting a drainage objective . . ." Later, staff again acknowledges that "[t]here is a lack of scientific economic, social and environmental studies and monitoring of agricultural lands stewardship programs to evaluate their merits for ecosystem restoration . . ." These statements beg the question: Why is staff recommending a strategy to retire agricultural land for ecosystem restoration, that admittedly lacks scientific merit?

The Ag Caucus recommends staff either find sound scientific data to back up its recommendations or remove those recommendations from this section.

Conclusion

The Agricultural Lands Stewardship section does not provide the technical information necessary to assist local and regional decision-makers, as intended by the Legislature. As drafted, it is instead an environmental thesis, reminiscent of the CalFed's Working Landscapes program, which, the Ag Caucus would submit, similarly fails to promote true agricultural stewardship, by instead focusing on the conversion of agricultural lands to wildlife habitat.

California's farmers and ranchers have proven to be excellent, successful stewards of their land and the environment overall. Staff should concentrate on providing accurate information for strategies involving voluntary, incentive-based programs. These programs should encourage the continuation and participation by farmers and ranchers in these programs in harmony with the continued production of California's vital agricultural lands. Staff should exclude strategies based on the removal of agricultural lands from production.

[1] Some of the terms and phrases staff uses include, but are not limited to: "land retirement," "land conversion," "stopping irrigation on a permanent basis," "permanently remove land from agriculture," "public acquisition of land for nonagricultural use," "cease commercial agriculture," and "crop-idling."

Page 2 of Agricultural Land Stewardship, Current Initiatives, states "Since government land acquisition programs can only affect a small portion of agricultural land, ------". This clause should be eliminated. It implies that government acquisition of farm land is a preferred option!

The last sentence of paragraph 1 on page 3 of the stewardship section states "there are programs which limit or cease commercial agricultural use to promote wetlands and other wildlife sensitive areas------ ". This is reallocation of farm land and water use to environmental use and is not an act of Agricultural Land stewardship. This and proposed land fallowing to benefit the environment should be eliminated from this section.

The cost of land retirement should be discussed here if referenced in the SIO Table.

Ag Water Use Efficiency
Table on page 3 – the last column is mislabeled. It is "change in percentage" or "percentage change"– not "% change".
Side bar on page 3 - There needs to be an explanation of overall on-farm water use efficiency – that 78% is a high efficiency and that it doesn't mean that ag is wasting 22% of its water. Also that the added acres of trees and vines was not added ag acres, but a crop shift (this should be verified, but I believe is true.)

RDI sidebar, page 4
Paragraph 1 – Under the reasons stated for RDI the reduction of crop water use is usually not the goal of this irrigation management strategy and should not be included in the list of goals. It may be a resulting benefit but it cannot be suggested without further study.

Page 4-5 – Reducing ET - I saw no mention, in this or any other section, weed management as a means to reduce unproductive ET. Shouldn't this be mentioned somewhere?
Should be mentioned here and in the Watershed strategy.

Potential Benefits of Ag WUE, page 5
Paragraph three on page five discusses potential environmental benefits due to changes to flow and timing but it should be added that there are also potential negative effects to in-Delta water quality if water releases occur at the wrong time to benefit agricultural water users.

Recommendations, page 8-9
Page nine , number eight – It doesn't make sense to impose volumetric pricing in conjunctive use districts where local communities benefit from agricultural groundwater recharge. This should be a qualified recommendation.

Page 10, Informational Sources
Correct web site addresses:
(Delete "California") Agricultural Water Management Council – www.agwatercouncil.org
California Farm Water Coalition – www.farmwater.org

Conjunctive Management and Groundwater Storage
Changes are all in caps.
I believe this piece accurately lays out the potential benefits and downsides to conjunctive management and ground water storage. However, the introduction on page 1 should include a note that both Calfed and local/regional surface storage projects are related to conjunctive management. Right now that connection is missing.

Page 2 identified how much DWR's Conjunctive Water Management Program has awarded in grants and loans throughout the state. What would be helpful here is an indication as to (on average) what % of the total project costs this number represents. For example, is there a local agency amount being invested equal to that amount, 10% of that amount?

Page 3 identifies the benefits of the Orange County Groundwater Replenishment System (GWR). One of the benefits is that the GWR results in a decreased "*...reliance on imported water from northern California and the Colorado River.*" I think this statement should make clear that to the extent there is a lessening of a local reliance due to the DWR on north state water, there is not a reduction in import of north-state water. Indeed, under the Napa/UOP/SDIP (CalFed) criteria more, not less, north state water will be exported to the south state.

Page 5's first paragraph correctly identifies the important role of local government through land use planning decisions with regards to ground water recharge. If anything I would like to see this section expanded to amplify the importance of local land use management agencies and how they incorporate ground water recharge as a resource to be properly managed and incorporated into planning doctrine. The

second paragraph - dealing with water quality - should also emphasize the role of local land use planning and regulation in the protection of water quality.

Missing on page 5 is any connection between ground water recharge spreading basins and the potential risk to human health from mosquito carried diseases. Groundwater spreading areas can be a breeding ground for significant numbers of mosquitoes which may carry deadly disease. This is an important factor in terms of diseases which put human life at risk such as encephalitis and west Nile virus.

Page 5 rewrite item #1 (Recommendations) as follows:

"THE DEVELOPMENT of regional groundwater management plans SHOULD BE CARRIED OUT IN COOPERATION WITH OTHER LOCAL AGENCIES WITH AUTHORITY IN THE FOLLOWING AREAS; GROUND WATER REGULATION AND PLANNING, SURFACE WATER, LAND USE PLANNING AND REGULATION, HEALTH SERVICES, AND ENVIRONMENTAL PROTECTION. Local water management agencies should ALSO coordinate with other agencies that are involved in activities that might affect long term sustainability of water supply and water quality with the basin or adjacent to the basin. ADDITIONALLY, LOCAL AGENCIES SHOULD CONSULT WITH OTHER AGENCIES AND LOCAL GOVERNMENT EARLY IN THE PLANNING STAGES OF ANY PROJECT DEVELOPMENT." (Note to readers: remainder of paragraph remains the same).

Page 5 – Environmental concerns – CU projects can result in land use changes and ag land conversion. This is a concern and cost that should be mentioned.

Page 6 item #3 change to read:

"Give priority for funding and technical assistance to conjunctive projects that are conducted in accordance with a groundwater management plan THAT HAS BEEN PREPARED IN COOPERATION AND CONSULTATION WITH OTHER LOCAL AGENCIES, GOVERNMENTS AND STAKEHOLDERS THROUGH AN OPEN AND PUBLIC PROCESS. FUNDING PRIORITY SHOULD BE TO THOSE PROJECTS WHICH INCREASE WATER SUPPLIES AND HAVE MULTIPLE BENEFITS INCLUDING THE SUSTAINABLE USE OF GROUNDWATER, MAINTAINING OR IMPROVING WATER QUALITY, HEALTH AND HUMAN SAFETY, LAND USE PLANNING AND REGULATION AND enhancing the environment." (note to readers remainder of paragraph remains the same).

Page 6 item #4 change to read:

(note to readers existing paragraph remains the same add the following) "GROUNDWATER MANAGEMENT ASSESSMENTS SHOULD ALSO INCLUDE AN EVALUATION OF HOW CONSULTATION AND COOPERATION WITH OTHER LOCAL AGENCIES AND GOVERNMENTS AS WELL AS OTHER STATE AND/OR FEDERAL AGENCIES HAS BEEN CARRIED OUT AS AN INTEGRAL PART OF THE MANAGEMENT STRATEGY OF INTEGRATED RESOURCES MANAGEMENT PLANNING."

The section on conjunctive Management and Groundwater Storage is important and discusses both benefits and limitations. However, the use of terminology is confusing. Under Potential Benefits, page 2, it uses CALFED's term "water supply reliability". Neither CALFED nor the Water Plan defines that term. Does "reliable" mean more adequate, or more uniform, or more predictable, or something else?

Under Current Conjunctive Management, page 1, and elsewhere it discusses increased deliveries but does not say to whom water is delivered or whether the increased delivery is an increase in statewide water supply or is in part a reallocation of water used for groundwater fill from one region to another.

These confusions should be clarified.

Groundwater Recharge sidebar: "…also occurs (delete artificially) from water placed…" and "…Significant amounts of INDUCED recharge can occur…" INDUCED is a more accurate word and should be substituted where "artificial" is used.

Conjunctive Management Case Example, sidebar, page 3, bullet 3 should include references to Central California and Eastern California. Bullet point 5 – need to discuss what happens to minerals. Do they evaporate or disappear or do they increase TDS of the Pacific Ocean?

Page 4, Lack of Data, last line substitute "unpredictable" with "unanticipated." Infrastructure and Operational Constraints – '…facilities are often not large enough to capture ALL surface water…"

Page 5 – Water Quality: '…agriculture can generally use water of lower quality than needed for SOME urban uses…" Add TDS to end of same sentence.

Environmental Concerns "…reducing these peak flows can negatively impact SOME ASPECTS OF the ecosystem."

Page 1
Fist paragraph, third sentence: "Conjunctive management allows surface water and groundwater to be managed in ***a more*** efficient manner…."

Second paragraph, fourth sentence: "The second component is to ~~switch to~~ ***increase*** groundwater use…."

Page 2-3
In the "Potential Benefits from Conjunctive Management" section, it would be better if the "aggressive" estimate of new water availability was not included. The clarifying sentence that this estimate would only occur if conveyance capacity was improved and aggressive project reoperation was approved is buried on the next page. It would be more accurate (and realistic) if the "conservative" estimate is the only one listed, or if the explanation of the "aggressive" estimate is included in the same sentence.

Page 5
First paragraph (continuation of the paragraph starting on page 4) third sentence: "~~Failure~~ ***Efforts*** to integrate water management across jurisdictions ***must be balanced with local control of water resources and recognition of water rights and law*** ~~makes it difficult to manage water for multiple benefits and provide for sustainable~~ ***[continue striking the rest of the sentence]."***

Environmental Concerns paragraph, fourth sentence: "***Studies are being conducted to determine the extent to which*** removing or reducing ***a portion of*** these peak flows can negatively impact the ecosystem."

Conveyance
Changes all in CAPS

Generally, the piece provides a good overview of the role of conveyance in the State's water system and the scope of the benefits and complexity of the system. I did note that while conveyance facilities were identified as both natural (rivers and streams) and man-made there was a disconnect of sorts on this point. That is, maintenance of man made systems was highlighted; however, the maintenance/management of natural systems (rivers, streams and the watersheds that support them) was overlooked. This "historic" but incorrect bifurcation of conveyance systems should not be perpetuated in Bulletin 160-03.

Specific comments follow:

Page 3 Benefits of Conveyance change second sentence as follows:

"...in maintaining or increasing water supply reliability, PROTECTION OF WATER QUALITY, augmenting current water supplies..."

Page 3, Benefits of Conveyance change fifth sentence as follows:

"...that IN SOME CASES improving water supply reliability through system flexibility is just as valuable as increasing overall supply."

Page 3, Benefits of Conveyance add additional bullet point as follows:

PROTECTION OF WATER QUALITY

Page 4, Major Issues Facing Conveyance - Maintenance change as follows:

"It is essential at a minimum to maintain the current level of capacity for both natural and constructed facilities. This is likely to take on greater importance over time due to aging water infrastructure, the increasingly higher costs of maintenance and the increasing demands with increasing population. While concerns are likely to focus on adequate financial resources to maintain conveyance infrastructure, there is the special case of diminishing conveyance capacity of natural water courses. This is most critical from both a water conveyance and flood passage standpoint in the channels of the Delta. IN ADDITION, RIVERS AND STREAMS DEPEND UPON A WATERSHED WHICH IS IN GOOD CONDITION AND STABLE OR IMPROVING IN TREND, SO AS TO PROVIDE THE CRITICAL FUNCTIONS OF SNOW PACK STORAGE, RUNOFF, WATER QUALITY, AND WATER FILTRATION IN GROUNDWATER. THUS, WATERSHED MANAGEMENT ACTIVITIES WILL ALSO REQUIRE INVESTMENT AS PART OF THE NATURAL INFRASTRUCTURE OF THE STATE'S WATER SYSTEM.

Page 5 first paragraph last two lines:

"...that the downstream water users could or should be more committed to ASSISTING IN managing the natural infrastructure, such as watersheds, from which their imported water originates."

Page 5, Recommendations, item #2 change as follows:

"Assure adequate resources to maintain existing MAN MADE AND NATURAL conveyance facilities and capacity AND CONDITION.

Page 3
In the "Benefits of Conveyance" section, change the first bullet, second sentence to read, "In order for water to be developed by new groundwater or ***off-stream*** surface storage…."

Same section, add the following to the third bullet: "Conveyance can improve water quality by moving more water when water quality conditions are better or less impacted by the movement of water, ***or by moving more water to increase flows to improve water quality (i.e. decrease salinity in the Delta).***

Page 4
At the end of the "Maintenance" section, add the following sentence: "…in the channels of the Delta. ***Diminishing conveyance is also a problem for flood control conveyance facilities such as bypasses that over time fill with silt, debris and plant growth that decreases the facilities' ability to operate effectively as outlets for flood waters."***

Page 5
Add the following to the end of Recommendation number 2: "…capacity in areas of the Delta***, and in flood control structures."***

Conveyance – There is no mention of Delta levees and other levees, their role and importance in water conveyance. The CALFED solution relies on a through-Delta conveyance strategy that relies on Delta levees, but there is absolutely no mention of this. The importance of a robust levee maintenance effort and the current lack of funding needs to be discussed. The CALFED side bar does not even list the Levees Program. Especially given recent events, this is a glaring omission.

This section also does not mention an Isolated Conveyance Facility. Pages 28 – 29 in the CALFED ROD clearly state how an ICF will be addressed. Since the State Water Plan is a 30-year planning document, the fact that an ICF may need to be considered in the future should be included, consistent with the CALFED ROD.

Desalination
Comments for Desalination Chapter

This chapter provides a boilerplate discussion of the history, the status, and the future potential of desalination as a provider of potable water in the state. Much of the information presented has been lifted out of the 2003 Desalination Task Force Report, particularly with respect to the Desalination Recommendations. The level of detail for this chapter should be sufficient if the target audience is the general public. However, a discussion of actual desalination projects including those outside of California should be included if the document is intended for an audience who may be considering a desalination project.

The success or failure of one project tends to have a significant impact on the level of acceptance of an emerging technology, such as desalination. Tampa Bay Water for example, experienced a number of financial and technological setbacks in the construction of their desalination facility. These setbacks included bankruptcies of contractors and fouling of the membranes used to desalinate the seawater. The resulting fallout from the project was a decision by the Board of Directors of the San Diego County Water Authority to suspend negotiations with the primary contractor pending the outcome the Tampa Bay facility situation. Though the Tampa Bay facility is not indicative of all desalination projects, it serves as a real life example of the pitfalls to avoid when evaluating the feasibility of desalination projects. These actual projects give more meaning to the chapter discussion, especially the Desalination Recommendations Summary compiled by the Desalination Taskforce. (This discussion could be added under the heading "Major Issues Facing Desalination", pg.5).

Additional Comments

Potential Benefits of Municipal Desalination in California

Additional benefit to add to the list:

- Reduces the demand for agricultural to urban water transfers

Growth Inducing Impacts

Many coastal communities may not agree with the authors' contention that a chronic water shortage is the primary reason why additional development has not occurred along the coast. Many of these communities are anti-growth, and characterizing desalination as a tool to significantly expand coastal development may not be the route to follow in promoting the technology.

Drinking Water Treatment and Distribution

Economic Incentives

Economic Incentives (Loans, Grants, and Water Pricing)

1. Page 2, 1st paragraph under Potential Benefits from Economic Incentives – The phrase "or help stretch water supplies during times of shortage" should be added to the second sentence.
2. Page 4, Item # 1 – This recommendation states that pricing incentives should be instituted that encourage the sustainable use of groundwater and that reduce excessive deep percolation of water in agricultural drainage problem areas. How would this be accomplished when most of the state's groundwater basins are not adjudicated? Are these recommendations feasible?
3. Page 5, Recommendation # 2 – It is stated that loans should be instituted that support better regional and statewide water management. However, the 1st bullet then says that ranking criteria should be developed that consider "economic, environmental, and equity issues, economic hardship, Public Trust, and Environmental Justice or order to allocate the funds. This may be admirable but it is unlikely to result in statewide better water management. It is also stated that the grant and loan process should account for the fact that some water agencies have limited funds and staffing to prepare applications. How will this be done?

Page 1, Observation on first paragraph

Water agencies are able to utilize water sales (charges) to fund their planning activities. The Bulletin 160, as well as the Governor's Office of Planning and Research have advanced the cause of integrated resources planning with closer water agency local government cooperation - which is a positive. There should be recognition that cities and counties are more limited in their ability to collect fees that can be used to pay for long-range planning. Therefore, to the extent that public funds are considered as a source of revenue, the plan should incorporate a recognition for the need to assist local governments in paying for planning activities.

Page 4, Recommendations to Help Promote Economic Incentives

First bullet item: This proposal would have the CalFed Bay Delta Authority proposing appropriate water measurement for <u>all water uses in California</u>. The CalFed Bay-Delta Program does not geographically encompass all of the land area of California and therefore it is questionable if areas which are not in the CalFed Solution Area, are not part of the CalFed Bay-Delta Program (including its funding sources) and which are not represented on the Bay-Delta Authority, should be subject to CalFed directives. This should be rewritten so as to provide a clearer distinction between the entire state and CalFed.

<u>Observation on bullet items.</u> The present water pricing structure of most water purveyors externalizes at least some environmental costs which represent a portion of the supporting natural infrastructure in collection and conveyance. That is, watershed management and restoration costs are for the most part externalized from the cost of water by the agency and the user. In terms of creating a long-term sustainable system it would seem prudent for the Bulletin 160 to recognize this disconnect between customers and the watersheds.

Page 5, please add an item #6 as follows:

"THE STATE SHOULD EVALUATE THE CURRENT SITUATION REGARDING COLLECTING OF WATER FEES AND THE RELATIONSHIP OF THOSE FUNDS TOWARDS INVESTING WITH A CONSIDERATION OF MAINTENANCE AND MANAGEMENT OF NATURAL CONVEYANCE SYSTEMS AND WATERSHEDS."

Ecosystem Restoration

In California, numerous entities, including local, state, and federal agencies as well as private organizations, acquire land for ecosystem restoration and wildlife habitat preservation. Productive agricultural land is often the target of such purchases. The Agricultural Caucus of the Advisory Committee ("Ag Caucus") submits the following recommendations in the hopes that rather than focusing on the acquisition of more land, the authors ("staff") of this section of the California Water Plan Update ("Plan") will focus their strategies on the maintenance and development of lands already designated for ecosystem restoration.

Staff misstates the success of existing programs and implies unrealistic goals might be achievable
Staff begins its introduction to this section by stating, "California ecosystems cannot be restored to the natural state, or even to pre-Gold Rush conditions." This statement adds nothing to staff strategies and implies that this is a desirable goal. Staff fails to explain where it has been shown that restoring the environment to this level, even if feasible, would be better for the environment – overall. Staff does not provide science to support this implied value judgment as to superiority of a pristine, pre-human, environmental baseline, or the implication, by extension, that coming as close as possible to an absolute return to that condition is in the greatest public interest, or would provide the greatest benefit to the existing environment. Even if staff could, this is a proposition which is by no means settled.

Further into the introduction, staff states, "the California Bay-Delta Program has served as an example of integrated resource management – improving water supply reliability while simultaneously restoring ecosystems – and seems far more likely to succeed than single-purpose pursuits." The Ag Caucus contends this is debatable considering the program is being litigated and has not received federal reauthorization or federal governance legislation. Moreover, the program has little to show, if anything, with respect to actually meeting its milestones and recovering species.

Finally, staff continually makes references to the "public trust" and "public trust doctrine" in describing the responsibility of water managers. *The public trust doctrine, in the legal sense, does not apply in all instances*. To avoid confusion by the reader, and misapplication by decision-makers, the Ag Caucus recommends this phrase should be removed from this section.

Staff should clarify definitions and concepts with an unbiased tone
Staff claims, "…[u]nlike other stressors whose impacts cannot be avoided, such as *past* damage from hydraulic mining, urbanization or introduced species, water projects can be stopped if society deems the environmental impacts to be unacceptably high." (Emphasis added). This statement is biased. First, the public can effect changes in patterns of urbanization and the introduction of invasive species that were begun in the past. In fact, the public can participate in land use decisions as well as programs to control and prevent invasive species. For that matter, even damage from past practices, such as hydraulic mining can be partially rectified through engineering solutions, such as dredging and levy improvements. Thus, the supposed distinction between water projects and the consequences of other past actions is unfounded and misleading.

Secondly, existing water projects, regardless of their negative effects, typically continue to provide significant societal, economic, environmental and other benefits. In this sense, there is a significant, qualitative difference between public water projects, on one hand, and, on the other, sedimentation from hydraulic mining, urban sprawl, or noxious invasive species, all of which are generally negative developments, without attendant benefits. Thus, the notion that a fully operational, existing water project, any more than these other things, can or should be "stopped," unjustly singles out an important societal resource.

Overall, staff creates a bias against water projects by identifying the state's water projects as the only controllable means of "improving ecosystem health." In a fairer assessment, water projects are neither so mutable, nor other obstacles to ecosystem restoration so immutable as staff's text suggests.

Private landowners conservation efforts should be recognized and encouraged
Staff provides a box, on page two, containing "Ecosystem Data" discussing restoration projects, biological resources, and organizations involved in restoration. This section fails to recognize that nearly all listed

species in California spend at least part of their life cycle on private lands. An estimated 75% of private land in California supports habitat. Eight percent or more of wildlife in the continental United States is dependent on private land for food, water and shelter.

The Ag Caucus recommends that staff include information about the hundreds of private, voluntary endeavors that protect, restore and enhance ecosystems throughout the state. Some possible sources of information include the Plan's own Agricultural Land Stewardship section, as well as the California Farm Bureau Federation free publication, *Commitment to Conservation*, published in January 2002.

Management of existing lands acquired for ecosystem restoration should be the primary focus of staff recommendations

Regardless of the circumstances, when a government entity acquires new property, it also assumes the responsibility of land management. Currently, this responsibility is not being fulfilled, as major maintenance projects are not being implemented before additional land with similar needs is being acquired. As reported by the Bureau of State Audits ("Report"),[2]

> "the Department of Fish and Game (Fish and Game) and the Department of Parks and Recreation (DPR) do not adequately manage the land they acquire for ecosystem restoration and wildlife habitat preservation. Neither department has a written plan defining management goals and strategies for at least one-third of the properties it owns. Existing plans often have not been updated to account for changes in the condition of the land, changes in land use, or advances in scientific practice." "Consequently, they have no way of knowing whether they are maintaining properties adequately for their intended purposes, such as protecting endangered species or restoring critical ecosystems." "The State's policy is to acquire and restore to the highest possible level those areas that can most successfully sustain wildlife. However, Fish and Game has not completed land management plans for more than half of its properties. For instance, it has no plan for Rancho Jamul, 2,260 acres acquired in 1997 to preserve and manage declining sensitive species and habitat in San Diego County."

In addition, the Report describes the condition of the DPR system,

> "the DPR cannot measure progress in completing its goals because the park system plan has not been updated since 1982, and it has not prepared individual general plans, which outline an appropriate preservation and management strategy, for 84 (34 percent) of its 249 parks." "In fact, 50 of the parks that still do not have plans were established by the DPR between 1960 and 1965 – almost 40 years ago. For example, the DPR has no plan for Castle Crags State Park, a unit in the Northern Buttes District encompassing about 4,350 acres that was classified as a state park in 1963."[3] "For three of the four Fish and Game properties and three of the six DPR parks we reviewed, the departments did not meet certain objectives or undertake some restoration projects."[4]

Consistent and thorough management of acquired land is essential for ongoing benefits. The Ag Caucus recommends staff emphasize maintenance of existing property by recommending the following strategies:

- decision-makers should ensure that the proper management of currently existing habitat and state parks is being achieved before purchasing new land,
- state departments and agencies should establish a mechanism in future bond acts involving land acquisitions that sets aside a portion of the proceeds for major maintenance projects, and

[2] *California's Wildlife Habitat and Ecosystem: The State Needs to Improve Its Land Acquisition Planning and Oversight*, California State Auditor, Bureau of State Audits, June 2000-101, pp. 23.
[3] *Id*. at 24.
[4] *Id*. at 27.

- the state should establish mechanisms to ensure that ongoing management of land acquired with bond money is funded; for example, it could create a designated revenue stream or require the establishment of plans demonstrating how those ongoing costs will be met before new land is acquired.

Costs of Ecosystem Restoration

In its discussion of the costs of ecosystem restoration, staff admits that "[a] statewide summary of ecosystem needs and their costs does not exist." In reporting the millions of dollars spent through the California Bay-Delta Program ("CalFed") for ecosystem restoration, staff fails to mention that very little of this goes toward managing lands after initial acquisition or into the development of scientific research and data collection. Additionally, staff reports that the CalFed Environmental Water Account ("EWA") "acquired about 900,000 acre-feet of water, at a cost of about $140 million."

The Ag Caucus recommends:

- that staff acknowledge that current scientific data does not exist to establish baselines, define needs, or create work and monitoring plans to ensure the goals of ecosystem restoration projects are actually met without causing unintended environmental degradation;
- that staff includes in its costs analysis the additional cost of responsible management of lands; and
- staff should provide a complete picture for the reader by also reporting that no science exists that shows any of the EWA purchases or action created any measurable benefit to species.

The public should be informed when decisions are based on something other than scientific certainty

Staff states, "[w]hen precious resources and endangered species are involved, we often do not have the time or money to fully develop our scientific understanding before action is needed." As staff should know, many environmental statutes direct agencies to make regulatory decisions based on the best science available. Aside from the potential legal peril of proceeding in such a manner, it is difficult for the public to determine whether decision-makers are acting appropriately or arbitrarily, if there is no acknowledgement by decision-makers that an agency is acting on the basis of something other than sound science.

Staff's recommendation is unacceptable to the extent it suggests that decision-makers can circumvent state and federal law by adopting their own judgment as a basis for decisions.[5] There should be frank disclosure of scientific uncertainty where it exists, if not outright forbearance from action.

The Ag Caucus recommends:

- When the appropriate level of science is not available, the public should be informed that decisions will be based on something else,
- Under these circumstances, decision-makers should acknowledge that the authority is based on a policy instrument, *not* a scientific standard of proof required by statute,
- the decision to go forward with strategies, based on anything less than sound science should be subject to peer-review, and
- This section should be expanded to provide readers with any statutory requirements for science-based decision-making and sources for peer-review of all decisions made simply based on judgment.

Sound, accessible data collection should be a priority

Staff admits that, "[t]here is no complete inventory of ecosystems and their health. Key criteria to prioritize conservation actions are lacking, scattered or incompatible for comparisons. There is also no reporting system and incomplete metrics for evaluation of the outcome of various restoration and management strategies. This is necessary for more efficient investment of public funds."

This admission highlights a significant problem with current attempts at ecosystem restoration. If restoration efforts are not conducted in the appropriate, scientific manner, public funding will be wasted and valuable resources lost.

[5] This concept, action before science, is known as the Precautionary Principle.

The Ag Caucus recommends staff:

- move this admission to the beginning of the ecosystem restoration section,
- advocate, as its number one strategy recommendation, the collection and study of relevant data so that efforts for ecosystem restoration proceed in a scientific manner. To do otherwise will result in decisions based on political rather than sound empirical science: This is unacceptable.

Staff should encourage the fair and equitable distribution of program costs
In its discussion of water supply projects, staff recommends user fees as a source of revenue. The Ag Caucus recommends changing the phrase "user fees" to "beneficiary pays." In doing so, staff should explain that the beneficiary pays approach should apply to all who *benefit* from improved water supply and reliability. Including the general public and environmental organizations.

Recommendations for program components
Staff should include the following components in all ecosystem restoration strategies:

- Standard procedures to track and document the success or failure of ecosystem restoration activities should be established and applied statewide. Without such procedures, decision-makers cannot ensure that their efforts will consistently meet the goals and objectives of management plans.
- Any plan for acquiring land for ecosystem restoration and wildlife habitat preservation should not include productive agricultural lands.
- Entities should be encourage to adequately manage their land by preparing management plans for all properties, periodically updating such plans, and systematically tracking plan implementation.
- Entities should be required to establish a plan demonstrating how ongoing costs will be met before acquiring more land.
- The state should create, maintain, and use to orient its decision-making an inventory of non-state owned land currently used as wildlife habitat.

The section on Ecosystem Restoration under Major Issues, page 4, should include a new item entitled "Competition for Ecosystem Water".

"If the Water Plan does not provide for enough water to meet both ecosystem needs and all human needs, the public support for ecosystem protection will be endangered to the extent that it competes for water that is needed to meet human needs."

Page 1
Third paragraph, first sentence: "Over the past ***couple of*** decade***s***, the public has…."

Page 2
The report sited is from 1993 (over a decade old). During that time, hundreds of millions of dollars have been spent in California on ecosystem restoration and fish passage activities that will not be reflected in the report. If they are going to quote sources they should at least be more current then the last Bulletin 160.

Page 4
The end of the first paragraph the sentence starting with "As ecosystem restoration actions help increase …" claims are made that ecosystem restoration will reduce ESA conflicts, pollutants will be filtered and groundwater recharge will increase. I do not think that we have the science available to us to make such strong assertions. I think these sentences should be struck.

Also, as I mentioned in the Pollution Prevention chapter review, I believe the tourism numbers are not accurate. I would also guess that that river recreation is a relatively small part of the $75 billion (or what ever the number may be).

Page 6

The "Funding" box should be struck. The user fee issue is not even close to being finalized, is highly controversial, and it is not clear how much revenue it will generate for Ecosystem or other programs. This box will just confuse the reader.

Floodplain Management
The section on floodplain Management in the first paragraph on page 2 discusses studies in the Sacramento River floodplain. A new paragraph should follow that paragraph as follows.
" Peak flood stages can be attenuated, and water quality and environmental benefits achieved in the San Joaquin watershed by restoring natural overflow of flood waters onto existing wildlife refuges and other dedicated wetlands. This concept is under discussion among the Fish and Wildlife Service, State Parks, Grassland Districts, the U.S. Corps of Engineers, the Reclamation Board, the San Joaquin River Flood Control Association, and State and Federal export projects."

What is now the second paragraph on page 2 in this section refers to restoring "meander belts". That paragraph should be expanded to say
"Meander belts along the valley floor of the San Joaquin watershed create problems. They result in loss by erosion of the berms that have oaks and cottonwoods. The greatly altered flow regime of the river can not create similar new berms as the old ones are lost. The eroded trees and material is carried down into the tidal waters of the South Delta. Deposited sediments in South Delta channels have already raised the bottom elevation by as much as eight feet in many miles of channel. This causes problems for flood conveyance and for local diverters of water, makes the water too shallow for good fish habitat, causes problems for navigation, and raises water temperatures".

Page 1 add new bullet point as follows:

"REDUCE FLOODING RISKS TO HUMAN LIFE "

Page 2, Benefits of Flood plain Management first paragraph third line change as follows:

"BY MAKING LOCAL LAND USE DECISIONS WHICH REFLECT AND IMPLEMENT FLOOD PLAIN MANAGEMENT THE OBJECTIVES OF MORE OPEN SPACE, AGRICULTURAL AND NATIVE PLANT HABITATS COULD BE ACHIEVED AND MAINTAINED. MANAGING DEVELOPMENT WITHIN THE FLOOD PLAIN TO REFLECT THESE OBJECTIVES, AND REMOVING SOME DAMAGEABLE PROPERTY FROM THE FLOOD PLAIN, CAN SIGNIFICANTLY REDUCE POTENTIAL FUTURE FLOOD RISK TO PEOPLE AND PROPERTY...."

Page 5, Recommendations for Flood plain Management item #1 change as follows:

"DWR and The Reclamation Board should lead the development of a LOCALLY BASED consensus process, INVOLVING LOCAL GOVERNMENTS, AGENCIES and appropriate stakeholders, to identify criteria and prioritize the implementation of Task Force recommendations, given the expected expenditures, using existing and new funding sources..."

Groundwater Remediation
Paragraph 1
Replace "agricultural or municipal" with "less sensitive"

Page 6
Add number 8 – "Develop better forecasting of long range weather patterns, so next time USBR won't dump the Colorado into Mexico just before a series of dry years in the watershed."

Matching Water Quality to Use
Paragraph three rewrite:
"Agricultural water supplies may require filtration to remove particulate matter that could clog low pressure irrigation systems and reduce soil infiltration rates. As an extreme case, Imperial Irrigation District runs all

water that it diverts from the Colorado River at Imperial Dam through siltation basins to remove suspended particulate before the water is released into the All American Canal. This water is delivered to the IID and CVWD. Farmers using this water have to perform filtration before they use it for drip irrigation. It has nothing to do with micro-irrigation or drip systems."

Other Resource Management Strategies
Comment on the table of Resource Management Strategies, page 5, are the same as comments submitted on the same table in Volume 1 and on the table's alleged yield from CALFED surface storage as previously submitted.

Pollution Prevention
I think it would be helpful to define both "pollution" and "contaminant" at the beginning of this section.

Page 2
The section on Environmental Water Quality should include mention of the benefits dams can provide in providing targeted cold water and pollution-diluting flows and in trapping sediment that contains contaminants such as mercury.

Page 3
At the bottom of page 3, a claim is made that California's beaches contributed $73 billion to the national economy. In the Ecosystem Restoration chapter, the number is $75 billion for the entire "California recreation and tourism industry" which includes beaches, rivers and I would imagine a few trips to the "Magic Kingdom," and other stops like San Francisco, Los Angeles, Yosemite, etc. I would guess that one of these numbers is wrong. Oh and by the way, is the claim that California beaches are "often closed because of contamination from urban runoff, stormwater [storm water in other parts of the text]…" true? I would guess that the state tourism board wouldn't like that to be the message on California's beaches.

Precipitation Enhancement
Based on the findings of the "NRC Report on Weather Modification" there is still some doubt regarding the efficacy of this technology. On page 3 of this chapter, the authors state "No complete and rigorous comprehensive study has been made of all California precipitation projects" but an estimated $3 million are spent each year on cloud seeding projects. Does this seem like a logical approach to follow? Shouldn't more funding be made available to investigate the efficacy of cloud seeding?

Benefits from Precipitation Enhancement
The highlighted box with the title "**New NRC Report on Weather Modification"** contains the following statement, "The report does not have much material on winter orographic cloud seeding, such as practiced in California and other western states, but does seem to concur that there is much evidence that it does work, possibly up to a 10 percent increase." This sentence should either be deleted or rewritten. The authors of the chapter are giving their interpretation of the NRC findings which may not be appropriate in this setting (public document).

Steve Shaffer mentioned a presentation given by Veerabhadran Ramanathan (Scripps Institute of Oceanography atmospheric scientist) on Global Dimming caused by black carbon and other particulates. Ramanathan discussed another effect of these particulates - decreasing the size of water droplets in clouds so the water does not fall as precipitation. The effect would make cloud seeding less effective. This could be another area of research to recommend in the chapter.

Recharge Area Protection
Add a paragraph after the first paragraph of the section on Recharge Areas Protection as follows.
"The protection of recharge areas is of great importance. However, in order for that protection to result in stored water the Water Plan must assure that an adequate supply of good quality water is available to be applied to the recharge areas. For example, the aquifer in eastern San Joaquin County is seriously

overdrafted. The necessary recharge area is available. But the Water Plan does not provide water for recharge".

7) Under Benefits from Protection of recharge areas on page 2, the two sentence paragraph at the bottom of the page should be replaced as follows.
"Protection of recharge areas assures that groundwater recharge can be achieved to store water that the Water Plan must provide (Water Code 10004.6) to replace groundwater overdraft".

8) The first bullet on page 3 of that section under Potential Costs should read "the cost, when necessary, to purchase or lease land that is to be used for recharge area".

Benefits from Protection of Recharge Areas
1st paragraph, substitute "eliminate" with "lessen."

Recycled Municipal Wastewater

Surface Storage – CalFed
(For Alex Hildebrand and John Mills)
1) The last two lines of the first paragraph on page 1 should be revised to read
"--------long term comprehensive plan to restore ecological health and improve water management for beneficial uses of the state's water system and environment within the CALFED solution area".

2) The last bullet on page 1 should be revised to read "Millerton Lake enlargement or a functionally equivalent surface storage project in the region". The reason for the change is to avoid possible interpretation to include the manner in which flood releases are managed or the use of the new storage space for purposes incompatible with water yield and flood control.

3) Following the next to last sentence on page one insert "However, if new surface storage projects premised on CALFED objectives, criteria, and processes can not be made feasible, those projects may be able to be redesigned or configured for local or regional objectives which make them feasible". The existing last sentence would then also be revised and expanded to say "As CALFED storage project costs, environmental effects, and benefits are compiled, regulators, the public, and ultimately decision makers will be asked to respond to the evaluations and conclusions. This would be the appropriate time frame to consider some projects for release by CALFED and perhaps to allow them to be carried on in some form as local or regional proposals."

4) Add at the end of the first paragraph on page 2, "The significant capital cost of surface storage projects must be paid for over multiple decades. The CALFED commitment to open ended obligations for projects and undefined operations criteria may make financing and partnering very difficult if not impossible. Should that occur, it may be prudent to examine these proposals as more modest, more focused, projects which serve local and regional needs independent of CALFED. If the surface storage proves to be important when operated primarily to meet needed future water supply, they may become state projects."

5) At the end of the 3rd paragraph on page 2, it should read"----adopt the new assumptions in future studies. This evolving project definition may make finding willing financial partners difficult until a clear project purpose and level of obligation is firmed up".

6) Page 3 under Potential Benefits from CALFED Surface Storage, second paragraph, states that the benefit from individual storage reservoirs could be anywhere from 'a negligible amount to over 400,000 acre feet". When compared to the water yield of existing reservoirs of comparable size, it seems doubtful that the 400,000 acre foot figure can be technically feasible. The DWR should ask to see a technical analysis to justify using this figure in the Water Plan. The figure can only be valid if the reservoir is filled with water that would otherwise flow to the Bay in excess of outflow requirements.

7) The paragraph following the one discussed in (6) asserts that "potential water supply improvements from implementation of all five surface storage projects are unknown". How then can the 0.7 to 1.0 million acre foot yield be justified from CALFED surface storage in the table of Water Management objectives that appears several times in the Water Plan? The claim should be removed from the table.

8) On page five under Recommendations, 1., insert a new 3rd bullet to say

- "If one or more CALFED storage projects are determined to be unfeasible, those project sites and data collected should be supplied free of cost to local and regional interests who may wish to pursue modified projects."

Surface Storage – Regional/Local

After the first two paragraphs under Surface Storage - Regional/Local insert the following paragraph. "Neither in this section nor elsewhere in the Water Plan is there a discussion of new surface storage that many have to be built by the state as part of the means by which an adequate overall water supply is provided as required by water Code 10004.6. There is also no analysis to show that new reservoirs will not be needed".

The purpose of this section is unclear. As stated, the section does not intend to deal with specific storage projects in the CALFED Record of Decision. Several completed non-CALFED storage projects are identified. This section does not identify any non-CALFED storage projects being planned. Therefore, the significance of these non-CALFED storage projects to the state's water future cannot be assessed.

This section points out the multiple benefits of storage with emphasis on non-traditional benefits. It also mentions that such storage projects may be the only option for solving water supply problems in the interior mountain part of the state, where other options are limited.

The section does not provide cost estimates for non-CALFED storage projects, which is not surprising because no specific projects are identified. However, there is a peculiar argument that cost estimates are not provided because such estimates can only be made for specific projects with defined operation rules and allocation of benefits and costs. Cost estimates could be made for any specific project without regard for operation rules and allocation of benefits. Essentially all of the cost is in the dam and its associated facilities. Granted, financing plans and methods of repayment would require knowledge of operating rules and allocation of benefits, but cost estimates would not.

Without discussion of specific storage projects, this section seems to have little value. The recommendations concern things that will happen anyway.

The water supply yield of the 41 MAF of storage should be stated by water year types.
A brief discussion of the types of surface storage (expand existing on-stream, new off-stream, new on-stream, etc.) with trade-offs should be presented.
It's interesting (and appreciated) that the loss of ag land is identified as a potential adverse impact (page 4). Ag land impacts should be similarly identified in other sections as appropriate.

System Reoperation

Like the section on local/regional storage, no specific examples of future reoperation possibilities are identified. Therefore, no assessment of the importance of system reoperation to the state's water future can be made.

This section should have included the latest version of the Napa/UOP approach as an example of system reoperation possibilities. Key reoperation elements of this approach include the following:

- Modified pumping operations (up to 8,500 cfs at Banks Pumping Plant under specified conditions)
- Protections for in-Delta agricultural users for supplies and water quality

- Protections for in-Delta urban users (Contra Costa) through an alternate diversion point.
- Coordinated operation of State Water Project and Central Valley Project, taking advantage of available state pumping and conveyance capacity and the available federal reservoir capacity, to improve the delivery reliability of both.
- Cooperative exploration of methods to reduce salinity through targeting specific problem areas such as Frank's Tract and refuge runoff.
- Accommodating early deliveries in some cases to accommodate differing needs of south-of-delta agricultural users.
- Recirculation of export water back into the San Joaquin river system for fisheries and quality flows, when used in conjunction with VAMP and reoperation of New Melones Reservoir.
- Upstream water supply gains resulting from the total package, with emphasis on San Joaquin River recirculation.

In addition, the Natural Heritage Institute has proposed a more comprehensive approach to reoperation. If DWR deems this to be beneficial, it should be mentioned.

Without some assessment of the reoperation possibilities and their effect on the state's future water situation, this section serves little purpose.

Specific comments are as follows;
- Page 1, line 2; …facilities to OPTIMIZE MULTIPLE beneficial uses.
- Second to last page insert new item #1: #1 REOPERATION ANALYSIS AND IMPLEMENTATION SHOULD, WHEN FEASIBLE, BE CARRIED OUT ON A WATERSHED-WIDE BASIS INCORPORATING ALL APPLICABLE WATER MANAGEMENT FACILITIES SO AS TO MAKE MAXIMUM BENEFICIAL USE OF RESOURCES.

Urban Land Use Management

Urban Runoff Management

Urban Water Use Efficiency
There is no mention of water consumption patterns within the urban environment – i.e. how much is used for landscape irrigation versus other uses. There should be a discussion of urban "crop shifting" and irrigation technology improvements – their costs and benefits. Recommendation 3 touches on this, but explicitly to the residential sector, as well as the "large landscape" sector.

Water-Dependent Recreation

Watershed Management

Water Transfers
Page 5
Top of first full paragraph should be offset by a headline such as "An Example of Local Leadership in Implementing Water Transfer Agreements." The December, 1988…….. Strike period, strike THE AGREEMENT.

Third paragraph, 4th sentence "In some cases….to reduce water rates, or reduce increases in water rates, improve facilities."

6th sentence: "farmers can use proceeds to reinvest back into the farming business or for other purposes.

4th paragraph" (and many other places): substitute the word "fallowing" for "crop idling." After commodity markets, add brokers, equipment sales, labor, endangered species, weed infestations, salt accumulation, etc."

To Table One: Add one more line: the 15-year dedication (by fallowing) of thousands of acre feet from Seller (Imperial ID) to Salton Sea, Buyer, for environmental purpose.

Page 7: Major issues: maintaining Ag 3rd line "on a periodic basis." Comment: This does not give attention that the period may be so long as 15 years for Salton Sea, 45 years for IID-SDCWA, or 75 years if extended. Would it be better if "on a periodic basis" were deleted?

Under environmental concerns: The script emphasizes the benefits of rice fields, but many other crops are also beneficial. Alfalfa is among the most beneficial.

Crop idling is used in two more paragraphs. Substitute "fallowing" also on 3 more places on page 8.

Page 8: Under "Economic Concerns," first line, and again on third line, "Extensive idling of crops" is mischaracterization. (See comment on Page 5, 4th paragraph,). Also, the sentence should strike the words "of manual laborers" after the word "unemployment." The unemployment is not caused only to manual laborers.

Line 8 refers to "fallowed land." Congratulations!

Next paragraph, third sentence: "A review of past water transfers has NOT shown long-term economic impacts to source areas." I question the veracity of this. Have you considered Mono Lake or the Owens River Valley? Delete the word "not."

Next sentence: "There is a concern that THESE areas…" I suggest that "more" should be used as a substitute for "these."

Page 10: There may be tyo typos on the second line. Also "crop idling" is used at "g" and "h." This should be "field idling" or "land idling."

Volume 3

Volume 3 Regional Reports, Chapter 8. Tulare Lake Hydrologic Region

1. Page 1, 3rd paragraph – The 3rd sentence should read "The California Aqueduct extends the entire length of the west side of the region, delivering water to SWP and CVP contractors…."
2. Page 4, 1st full paragraph – The 3rd sentence should read "CVP supplies are also sent down from the Delta through the San Luis Canal to agencies….".
3. Page 4, 2nd full paragraph – The total average supply for the Bureau of Reclamation of 2,700,000 af should be broken down to the components for the various contractors listed. When only the total is shown here and later in the water portfolios the severe delivery shortages the San Luis Canal contractors have been experiencing in recent years is masked. For example, the Agricultural contractors received 100% of our contract in the wet year of 1998 (1.15 MAF) but only 45% in the dry year of 2001 (500 TAF). In the average year of 2000 we received only 65% (750 TAF). All of the reductions in the average year and a part of the reductions in the dry year are specifically due to CVPIA environmental issues.
4. Page 7, 1st full paragraph – It is stated that the San Luis Drain currently carries water northward to storage and evaporation ponds. This is inaccurate. The Drain was closed down in 1986 due to environmental problems. The Grasslands Bypass Project uses a portion of the Drain to pass water to the San Joaquin River.

5. Page 8, last paragraph – Another issue that has caused farmers to improve irrigation systems is decreased water contract deliveries.
6. Page 10, 4th paragraph – This description of the Westlands Water District AB303 funding is inaccurate. Westlands received funding under AB303 and completed the project in 2002. The investigation included 3 deep soil borings and monitoring well installed by DWR under their ISI program to evaluate the storage, water quality, and extraction potential of the water table aquifer. AB303 funded the installation of 35 shallow borings to evaluate the percolation potential of the uppermost sediments. The study concluded that where the Arroyo Pasajero crosses Interstate 5 in the southern portion of the District is an excellent site for a conjunctive use groundwater application.

Volume 4

Volume 4 Reference Guide, Considering Water Use Efficiency for the Environmental Sector

1. Page 12, 1st paragraph – This description is inaccurate. After the 1st sentence I would change it to read… " In response the Bureau of Reclamation and the Department of Water Resources expended about 300,000 acre-feet of water comprised of a combination of upstream reservoir releases and Delta export reductions in order to maintain X2 compliance. One of the reservoirs that increased releases was Folsom Reservoir on the American River. The high flow….."
2. Page 12 2nd paragraph – Make the 1st sentence read…"These events negatively affected the 2003 salmon spawn." Make the 4th sentence read…" Due to the expenditure of water for X2 compliance less water was available in 2003 to supplant curtailed pumping…."

I believe that the discussion of climate change, particularly by M. Roos, in Volume 4 is appropriate. However, it should be stated clearly in Chapter 1 and/or Chapter 2 that although the subject is thoroughly discussed in Chapter 4, the Water Plan does not propose measures that would avoid a reduction in water supply that may result from loss of water storage in the snow pack.

Since there is a lack of consensus as to the approach and therefore usefulness of the AIC paper, either remove it or include other references and a discussion of water consumption embodied in the food Californians consume. The Water Education Foundation, the Farm Water Coalition and the UC Riverside Currents are sources for this information. The AIC paper by its own admission does not address the issues of potential irrigation water supply reductions resulting from global climate change. This is the crux of the matter. Professors Lund, Howitt, et al in another paper, (Climate Warming and California's Water Future, March 20, 2003, page 71) estimated that if GGC results in a 24% reduction in irrigation supplies – a plausible assumption, then even with a shift to higher value crops, ag income would drop by 6%. This is a very different outcome than the scenario presented in the AIC paper.